TELECOMMUNICATIONS AND RADIO ENGINEERING

CONTENTS FOR 1979

Number 1

	Page English	Page Russian
PART 1 TELECOMMUNICATIONS Volume 33		
TELEGRAPHY		
B.S. Vladishevskii, B.V. Korop and V.M. Siyanko: Evaluation of the Performance of VF Telegraphy Channels for Various Transmission Levels	1	9
E.E. Dvorskiy: Effect of Bypass Algorithms on the Effectiveness of Testing Telegraph Networks	5	13
B.K. Boldin: Production of Data Signals	9	22
A.Yu. Lev and A.L. Otlivanskiy: Fidelity Loss in Multichannel Signal Converters During Brief Signal-Level Declines	12	25
MULTICHANNEL WIRE COMMUNICATION		
Engineering Problems of Operation		
A.Yu. Tsym: Statistical Analysis of the Time Stability of Screening in a ARS-ARS Section	15	28
A.M. Mekkel, Yu.V. Minkov, E.V. Novikov, E.N. Rubinshtein, and E.P. Savost'yanov: A 8,448 Mbit/sec Linear Regenerator Using Integrated Hybrids	19	33
CONTROL AND MEASUREMENTS		
S.G. Kamlet, A.M. Tsiklis, A.R. Shpigel and V.M. Shchavinskaya: An Instrument for Measuring the Overload Threshold in VF Channels Set up by the PCM Method	23	37
COMMUNICATIONS SYSTEMS AND NETWORKS		
L.E. Varakin: Interference-Immunity of Communications Systems with Noiselike Signals	28	42
PROPAGATION OF ELECTROMAGNETIC WAVES		
N.B. Chimitdorzhiyev and Yu.L. Lomukhin: Additional Attenuation of Diffraction Fields	35	54
O.P. Frolov: Space-Polarization Diversity Reception in Long-Distance Tropospheric-Scatter Radio Links	40	59
I.L. Korneyev, A.V. Lopatin, V.M. Osipov, B.S. Rybakov and G.S. Sharygin: Variation of the Mean USW Signal Level in Long-Distance Tropospheric Propagation Over Sea	41	60

TELECOMMUNICATIONS AND RADIO ENGINEERING

CONTENTS FOR 1979

Number 1

	Page English	Page Russian
PART 1 TELECOMMUNICATIONS Volume 33		
TELEGRAPHY		
B.S. Vladishevskii, B.V. Korop and V.M. Siyanko: Evaluation of the Performance of VF Telegraphy Channels for Various Transmission Levels	1	9
E.E. Dvorskiy: Effect of Bypass Algorithms on the Effectiveness of Testing Telegraph Networks	5	13
B.K. Boldin: Production of Data Signals	9	22
A.Yu. Lev and A.L. Otlivanskiy: Fidelity Loss in Multichannel Signal Converters During Brief Signal-Level Declines	12	25
MULTICHANNEL WIRE COMMUNICATION		
Engineering Problems of Operation		
A.Yu. Tsym: Statistical Analysis of the Time Stability of Screening in a ARS-ARS Section	15	28
A.M. Mekkel, Yu.V. Minkov, E.V. Novikov, E.N. Rubinshtein, and E.P. Savost'yanov: A 8,448 Mbit/sec Linear Regenerator Using Integrated Hybrids	19	33
CONTROL AND MEASUREMENTS		
S.G. Kamlet, A.M. Tsiklis, A.R. Shpigel and V.M. Shchavinskaya: An Instrument for Measuring the Overload Threshold in VF Channels Set up by the PCM Method	23	37
COMMUNICATIONS SYSTEMS AND NETWORKS		
L.E. Varakin: Interference-Immunity of Communications Systems with Noiselike Signals	28	42
PROPAGATION OF ELECTROMAGNETIC WAVES		
N.B. Chimitdorzhiyev and Yu.L. Lomukhin: Additional Attenuation of Diffraction Fields	35	54
O.P. Frolov: Space-Polarization Diversity Reception in Long-Distance Tropospheric-Scatter Radio Links	40	59
I.L. Korneyev, A.V. Lopatin, V.M. Osipov, B.S. Rybakov and G.S. Sharygin: Variation of the Mean USW Signal Level in Long-Distance Tropospheric Propagation Over Sea	41	60

	Page English	Page Russian
PART 2 RADIO ENGINEERING Volume 34		
RADIO SYSTEMS		
Yu. S. Shinakov and G. M. Kurilenko: Synthesis of the Optimum Structure of the Receiver of a Radio Direction Finder That Simultaneously Detects Signals with Unknown Initial Phase and Measures the Angle of Arrival of the Wave	44	3
RADIO ELECTRONIC INSTRUMENTS		
D. E. Vakman: The Evaluation of Frequency Stability	49	8
A. L. Ryabtsov: Sensitivity of Optimum Receivers of Pulse Radio Signals to Deviations of the Input Signals from Those Calculated	53	13
K. P. Polov: An Adaptive Interference Compensator	58	19
RADIO CIRCUITS AND SIGNALS		
V. I. Vol'man and L. M. Logacheva: Absorption-Type Filter for High-Power Levels	62	25
B. L. Erukhimov: Interference-Immune Display of Analog Quantities on a Television Screen	65	29
D. V. Kruchinin: Synthesis of Circuits and Signals for Parametrically Invariant Receivers	69	33
Yu. M. Katruk and B. M. Rogachevskiy: A Method for Reducing Digital Resonator Discretization Frequency	73	39
I. N. Linnikov: Characteristic Points of the Dynamic Transfer Factor of a Single-Stage Oscillatory System	77	43
A. A. Sikarev: The Necessary Conditions for Minimizing the Action of Pulse Noise on Wide-Band Digital Data Transmission Systems	81	48
Ya. A. Kacherovich: Synthesis of a Discrete Frequency Mesh by Pulse Division of a Stable Frequency	86	54
ANTENNA-WAVEGUIDE TECHNIQUES AND THE PROPAGATION OF RADIO WAVES		
V. A. Kravtsov and L. B. Dyuzhkova: Surface Current of a Wedge with Longitudinal Electric Dipole Excitation and a Cylindrical Piece Along its Vertex	93	61
BRIEF COMMUNICATIONS		
Radio Systems		
V. K. Reshemkin and O. I. Shchayev: Noise Immunity of a Modem with Duplex PSK in Fading Channels	97	66
A. M. Zhabik, V. A. Malygin and S. M. Sheraizin: Probability Distributions of the Fine Structure of Pictures	100	69
E. S. Golovin: Generalized Correlation Function of a Mobile Communications Multipath Channel	103	73
E. N. Shiyanovskiy: Estimation of Signal Parameter Using a Criterion that Takes Account of the Detector Operation	105	76
Radio Electronic Systems		
V. A. Vlasenko and Yu. K. Filipskiy: Calculation of the Dynamic Distortions in Frequency Discriminators with FM-PhM-AM Conversion	107	79
Yu. V. Kulikov and M. E. Movshovich: Analysis of the Low-Frequency Characteristics of a Wideband System for Combining Powers	110	82
Radio Circuits and Signals		
A. I. Baskakov: Correlation Function and Averaged Power of Radar Signals Reflected From Sea Waviness	112	85
Yu. E. Gushchin: A Method of Calculating and Measuring the Energy Spectra of Signals in Real Time	115	88

Number 2

	Page English	Page Russian
PART 1		
TELECOMMUNICATIONS		
Volume 33		
RADIO BROADCASTING		
V.G. Buryak and T.G. Khvilivitskiy: Tuned Output Networks of High Power SW Transmitters	1	1
V.I. Yakimovich and V.B. Kopylov: Nonlinear Distortion in a Meter-Band Power Amplifier with Distributed Gain	10	10
COMMUNICATION LINES		
I.I. Grodnev, Ye.V. Balovlenkov and V.M. Bondar': Calculation of Screening Attenuation of Helical Multiwire Screens	17	17
AUTOMATIC SWITCHING AND TELEPHONY		
B.S. Lifshitz and V.A. Sokolov: Investigation of the Subscriber and Inter-Station Load on Urban Telephone Networks	21	29
M.Ya. Emdin: A Common Channel for the Mutual Interaction of Crossbar Automatic Telephone Stations	27	34
TELEVISION		
M.M. Kozlovskiy and A.A. Popov: Intermodulation Distortion Due to the Use of a Common Amplifier for the Picture and Sound RF Signals	32	38
MONITORING AND MEASUREMENTS IN COMMUNICATIONS TECHNIQUES		
A.R. Spiegel: The Scope of Measurements of Audible Transient Efforts in Audio-Frequency Channels Included in PCM Transmission Systems	39	43
V.P. Kovtun: Equipment for Testing a Channel Circuit of the IKM-12M System	41	45
CIRCUIT THEORY AND FILTERS		
V.V. Shtager: A Numerical Computation of Transients Using Transforms of Sampled Functions	45	48
Z.S. Karamov and G.I. Kolesnichenko: A Comparison of Modified Butterworth and Chebyshev Low-Frequency Digital Filters	51	53
L.E. Degtyar, L.M. Zafrina, A.V. Rafanovich and A.T. Rybalka: High Stability Passive Rejection Filters	55	56
PART 2		
RADIO ENGINEERING		
Volume 34		
RADIO ENGINEERING SYSTEMS		
L.S. Gutkin: Noise-Immune Optimal Digital-Data Reproduction Systems	57	3
RADIO-ELECTRONIC DEVICES		
R.I. Levitskii: The Theory of Telegraph Signal Demodulators	62	8
B.A. Stryukov and Yu.M. Zverev: The Operation of Phase Regenerators when a Reference-Generator Signal Acts on Them	67	14
E.I. Kovrigin and V.S. Melikhov: Highly Sensitive Preamplifiers for Opto-electronic Systems with High-Speed Photodetectors	71	18

	Page English	Russian
RADIO CIRCUITS AND SIGNALS		
A.M. Brikker: The Structure and Properties of a Sign Nonparametric Signal Detector	77	25
A.S. Kotousov: Optimum Discrimination of Signals on a Background of Intense Structural Interference	82	31
V.V. Vasil'ev and L.P. Kotenko: Comparative Analysis of Nonlinear Filters	88	39
BRIEF COMMUNICATIONS		
Radio-Electronic Systems		
S.M. Unanyan and N.N. Fomin: The Stability of Forced Oscillations in a Synchronized Microwave Oscillator	92	44
B.S. Romanov: Further Discussion of the Optimum Matching of a Preamplifier in a Receiving System	95	47
Radio Circuits and Signals		
O.V. Betskiy and V.M. Smol'yaninov: Special Features of the Phase-Frequency Analysis of Narrowband Processes in the Presence of Interference	97	50
K.K. Vasil'ev: Detection of Incoherent Pulse Signal Bursts Using Extremal Statistics	99	52
M.L. Turbovich: The Interference-Immunity of Cochran's Criterion for Detecting Noise Field Inhomogeneity	101	55
I.S. Makarov: Optimum Reception in the Presence of Intersymbol Interference	104	59
M.A. Baturitskiy, L.N. Danilevskiy, O.V. Korobko, and B.I. Tauroginskiy: The Discreteness of Signal Delay when Optimizing the Radiation Pattern of Antenna Arrays with Digital Processing	106	61
A.N. Averin and S.V. Zagryadskiy: Investigation of a Two-Section Ferrite Filter	108	64
Radio-Optics		
E.V. Borisov and R.G. Tolparev: A Method of Multiplexing Optical Channels	111	67
Devices and Components		
R.G. Mgebryan and A.A. Gorchakov: Evaluation of the Thermal Characteristics of Semiconductor Devices and Integrated Circuits Provided with Beam Leads	113	68
FOR THE ENGINEER		
V.V. Gruzdev: Special Features of the Single-Cycle Switching Made with Phase Inversion	116	72
L.L. Anan'ev, L.S. Nazarov, and A.M. Pozharov: Wideband Antenna Amplifier of the Aperiodic Type with Combined Matching with Respect to Power and Noise	118	75
G.M. Kuperman: Sensitivity of the Output Voltage of Linear Modulators to Changes in the Parameters of the Elements	121	79
S.L. Dzardanov, N.V. Soina, and M.S. Fogel'son: Investigations of the Intermodulation Component in an Amplifier Using a Field-Effect Transistor	125	85
Yu.G. Kryukov, V.M. Shishkin, and A.B. Kirpichev: Determination of the Percentage Yield of Satisfactory Hybrid Integrated Circuits Using a Graphical-Analytical Method	128	88

Number 3

	Page English	Russian
PART 1 TELECOMMUNICATIONS Volume 33		
ANTENNA-FEEDER DEVICES		
V.D. Kuznetsov and N.A. Reushkin: The Optimum Design of Distribution Lines for Community Television Receiving Systems	1	1
A.M. Somov: Calculation of the Noise Temperature of Microwave Receiving Antennas	7	7
M.B. Vysotskaya, G.K. Galimov, A.A. Smesarev and B.I. Chirkov: A Multibeam Antenna for Satellite Communications	12	11
A.M. Model, V.A. Stuzhin and Yu.S. Shkarinov: A System for Combining Wideband Signals of Different Frequencies	18	17
MULTICHANNEL COMMUNICATIONS		
G.M. Weizberg, I.L. Papernov and E.Ya. Ryskin: The Noise Immunity of FM Demodulators with Filters at the Input which have a Linear Phase-Frequency Characteristic	21	21
E.N. Melnikova: Determination of the Control Speed in Automatic Gain Control Circuits	27	27
ELEMENTS AND CIRCUITS IN COMMUNICATIONS TECHNIQUES		
A.E. Bakhmutskiy, Yu.E. Naumshin and V.N. Plyusnin: Analysis of the Operation of a Transistorized Balanced Modulator in a Keying Mode	30	41
V.B. Kozyrev: The Design of Low-Pass Filter Transformers	34	45
PART 2 RADIO ENGINEERING Volume 34		
RADIO-ELECTRONIC DEVICES		
M.S. Manakov: An Estimate of the Variance of the Error of an Analog Frequency Meter	39	3
V.V. Shakhgil'dyan and V.P. Burdzeiko: A Statistical Analysis of a First-Order Digital Phase-Locked Automatic Frequency Control System	43	8
R.A. Valitov, V.S. Zhilkov and R.R. Valitov: Microwave Transducers of the Pressure of Electromagnetic Waves	50	16
L.Ya. Shapiro and V.P. Bogdanov: The Construction of Broadband Amplifiers for Cable Television in the USW Band	53	20
RADIO CIRCUITS AND SIGNALS		
A.V. Efremov: Mutual Correlation of the Signals at the Output of Channels with Parabolic Phase-Frequency Characteristics	61	29
N.G. Sviridov: The Effect of Random Errors in the Control Channel of a Filter with Variable Passband on Its Effectiveness Under Steady-State Conditions	66	35
ANTENNA-WAVEGUIDE TECHNIQUES AND THE PROPAGATION OF RADIO WAVES		
A.F. Chaplin and A.N. Chekalin: Synthesizing a Reactive Loaded Antenna by the Method of Least Squares	70	39
G.A. Erokhin and V.G. Kocherzhevskiy: Determination of the Components of the Surface Impedance Tensor in Synthesis Problems	74	44

	Page English	Russian
BRIEF COMMUNICATIONS		
Radio Engineering Systems		
V.A. Alimov, S.T. Burtsev and A.V. Rakhlin: Noise Immunity of a Class of Adaptive Communications Systems with Subextremal Frequencies	79	49
V.V. Solov'yev and D.E. Shurupova: Analysis of the Functional Efficiency of a Group of Frequency-Adaptive Links as a Queueing System	81	52
Radioelectronic Devices		
R.M. Vitenberg: Adaptive Delta Modulator Quantization Noise	84	55
S.Kh. Karpenkov: Calculation of the Stray Field of a Thin-Film Magnetic Head	86	58
L.G. Yanin: Effect of the Continuous Component of a One-Sided PPM-AM Signal Spectrum on AGC	88	60
Radio Circuits and Signals		
A.M. Rembovskiy: Sequential Multichannel Detection Procedure	90	63
M.N. Berger and N.S. Simin: Microwave Measurement of Materials with High Permittivity	93	67
V.V. Rogozin: Transformation Factor of a Ferrite Filter with a Wire Coupling Loop	94	69
FOR THE ENGINEER		
V.M. Solov'ev, Gui Luan Nguen, and N.A. Borisko: A Heterodyne Method of Spectrum Analysis	97	72
D.P. Brilliantov, V.F. Samoilov, and F. Kh. Lubbadi: Distribution of Turns in High-Efficiency Saddle-Shaped Frame Coils	100	76
A.I. Kanter and I.I. Kanter: Analysis and Design of a Multiphase RC Generator with an Even Number of Stages	105	82

Number 4

PART 1
TELECOMMUNICATIONS
Volume 33

BROADCAST NETWORKS

G.S. Gedenidze, T.I. Chitishvili and A.S. Borokhovich: Computer-Aided Design of the Primary Intra-Zone Communications Network	1	20
H. Reck: A Data Transmission System Using PCM Channels	4	23
COMMUNICATIONS LINES		
A.S. Vorontsov and A.P. Markelov: Basic Parameters of Coaxial Cables for Wideband Transmission Systems	7	40
A.V. Kamburov, R.M. Lakernik, E.V. Skorospelova and E.G. Fedoseyeva: The Protection of Aluminum and Steel Cable Sheaths from Corrosion by Means of Insulating Covers	10	43
N.D. Kalinin and V.M. Khabibulin: The Electric Strength of the Insulation of MKS Cable When Subjected to Pulse Voltages	13	46
FACSIMILE		
V.E. P'yuk and D.G. Vorob'yev: Reducing the Power of a Facsimile Three-Level FM Signal	17	50

	Page English	Russian
GENERATION AND AMPLIFICATION OF SIGNALS		
I.A. Konnikov: Shaping the Amplitude-Frequency Responses of Transistor Amplifiers	22	56
V.V. Logvinov and N.N. Fomin: The Passage of a Phase-Shift Keyed Signal Through a Synchronous Microwave Amplifier	26	60
PART 2 RADIO ENGINEERING Volume 34		
ANTENNAS AND WAVEGUIDES		
L.Ya. Kantor: Evaluation of the Carrying Capacity Limit of Geostationary Orbits	31	5
L.M. Mashbits, N.M. Zevelev, L.I. Smolich, and Z.F. Patrusheva: Determination of the Assured Signal Level Zone of a Satellite Communications System	38	13
ELECTRONIC SYSTEMS		
S.M. Sarayev: The Reduction in the Sensitivity of Combination Reception Channels Due to the Use of a Balanced Mixer	43	19
RADIO CIRCUITS AND SIGNALS		
A.P. Gol'dberg and A.G. Vyalykh: Characteristics of the Detection of Radio Interference with a Concentrated Spectrum	49	26
A.E. Basharinov and A.A. Kurskaya: The Differentiation of the Age Categories of Sea Ice Through Location and Temperature Observations by Radio in the Microwave Band	53	31
A.B. Akvilonova and B.G. Kutuza: Determination of the Parameters of a Cloud Atmosphere from its Thermal Radiation	57	36
A.A. Bokrinskaya, V.I. Tsymbal, and G.N. Shelamov: An n-Coil Ferrite Resonator	62	42
RADIO-OPTICS		
K.N. Shelkunov and E.S. Barbanel: The Use of Phase-Difference Modulation in Optical Communication Systems	69	49
BRIEF COMMUNICATIONS		
Radio Electronic Systems		
M.G. Bulatov, I.A. Troitskiy, and V.S. Etkin: Optimization of the Characteristics of a Scatterometer for Investigating underlying Surfaces	74	55
N.N. Tetekin: A Method of Reducing the Effect of Quantization Errors in a Digital Synchronous Amplifier	75	57
V.P. D'yakonov and T.A. Samoilova: Inductive Relaxation Oscillator Using an Avalanche-Type Transistor and its Analysis Using a Computer	77	59
K.G. Stepanov: A Parametric Amplifier with Low-Frequency Pumping	80	63
L.S. Emel'yanov: Selection of the Instability of Analyzing Voltages in the Modulation Method of Measuring Solar Wind Parameters	83	66
V.I. Kapustyan: A Method of Tuning a Second-Order Bandpass Active RC Section	84	67
Devices and Components		
D.V. Igumnov and V.V. Drozhzhev: The Piezoelectric Transformer as an Emitter of Electromagnetic Waves	87	70
Radio Circuits and Circuits		
Yu.I. Fel'dman: Probability Density of a Random Process in the Case of Weighted Square-Law Summation	88	71

	Page English	Page Russian
V.V. Mkrtumov: Optimum Evaluation of the Parameters of the Trajectory of a Group of Moving Objects	90	74
Antenna-Waveguide Techniques and the Propagation of Radio Waves		
A.E. Basharinov, E.N. Zotova, and M.I. Naumov: The Scattering of Radio Waves by Moist Ground	92	76
Yu.I. Lukashenko, A.I. Maslov, N.A. Terletzkiy and L.A. Tsiurupa: Subsurface Sounding in the UHF Band of Lenses of Ground Water and Continental Glaciers	94	79
A.G. Trusov: A Method for Evaluating the Noise Immunity of Optical Systems for Transmitting Information over Free Space	95	81
G.S. Stoyanov and S.N. Prytkov: An Investigation of the Dynamic Characteristics of DC Voltage Pulse-Width Stabilizers	98	84
I.S. Andreyev and G.A. Tsepenok: The Stability of DC Amplifiers Using Field-Effect Transistors and a Method for Calculating Their Performance	101	88

Number 5

PART 1
TELECOMMUNICATIONS
Volume 33

WIRE AND RADIOBROADCASTING		
V.G. Buryak and Yu.E. Khodorov: Attenuation of the Transients in the Power-Supply Circuits of Radio Broadcasting Transmitters	1	8
G.Ya. Urin and I.I. Seleznev: A Low-Frequency Power Amplifier with Stepped Control of the Plate Voltage Supply	8	13
V.V. Timofeyev: The Arrangement of Communication Links Used to Transmit Programs for Radio Broadcasting Satellite Service	11	16
L.M. Mashbits, L.I. Smolich, and V.P. Chernomortseva: The Calculation of Mutual Interference in Satellite Communications Systems	14	19
I.N. Guglin and R.A. Maizuls: The Display of Information at a Ground Station of the "Ekran" System	20	24
V.D. Shabetnik: The Correction of Quadrature Distortion in a Television Signal	23	27
TELEVISION BROADCASTING UNDER MOUNTAINOUS CONDITIONS		
S.G. Avetisyan: Experience in the Design of Branch Circuits Connected to Trunk Line Radio Relay Links	26	30
V.N. Troitskiy: The Characteristics of the Ultra Shortwave Field in the Shadow of Mountain Ranges	29	32
COMMUNICATIONS SYSTEMS AND NETWORKS		
V.N. Roginskiy: Determination of the Load on Communications Networks with Channel Switching	31	34
MULTICHANNEL COMMUNICATIONS		
P.N. Dagurov, I.V. Kuzmin, V.L. Lokshin, N.N. Spivak, N.B. Chimitdorzhiyev, V.A. Shamshin and V.G. Yampolskiy: The Communications Stability of Radio-Relay Links with Long Transmission Paths	38	40
M.A. Bykhovskiy: An Optimum Frequency Allocation Plan for a Rural Network of Single-Hop Radio-Relay Links	46	47
I.L. Nepomnyashchiy: The Stability of Communications Over a RRL Transmission Path When Using an Antenna Director	53	52
V.I. Skoropadskiy, V.E. Pavlyuk and V.M. Grushevskiy: The Use of a Demodulator as the Controllable Element of an Automatic Gain Control System	56	55

	Page English	Russian
PART 2 RADIO ENGINEERING Volume 34		
ANTENNA-WAVEGUIDE ENGINEERING AND PROPAGATION OF RADIO WAVES		
A.A. Pistol'kors and O.S. Litvinov: Introduction to the Theory of Adaptive Antennas. Steady State Mode	61	7
A.E. Basharinov, E.N. Zotova, M.I. Naumov, and A.A. Chukhlantsev: Radiation Characteristics of Vegetation in the Microwave Band	69	16
RADIO OPTICS		
Yu.V. Gulyayev, V.T. Potapov, V.P. Sosnin, D.P. Tregub, and B.B. Elenkrig: Optical Fiber Communication Lines and Their Constructional Principles	76	25
MILLIMETER AND SUBMILLIMETER WAVE TECHNIQUES		
A.E. Salomonovich, V.N. Bakun, V.S. Kovalev, T.M. Sidyakina, A.S. Khaikin, B.O. Iskhakov, L.Z. Dul'kin, V.A. Kovkov, V.I. Kostyukevich, B.K. Chemodanov, L.A. Sen'ko, V.A. Mol'kov, V.S. Ovchinnikov, E.I. Grigorov, A.L. Magdesyan, A.A. Nikonov, V.P. Poluektov, A.V. Puchinin, I.A. Gerasimov, and A.V. Serov: A Submillimeter Telescope for the Orbital Piloted Station "Salyut-6"	82	33
RADIO CIRCUITS AND SIGNALS		
N.P. Khvorostenko: The Statistical Characteristics of Integral "Decision Feedback"	89	41
Yu.N. Arzamasov, and V.I. Krivosheyev: Optimal PAM Reception When Narrow-Band Interference and Fluctuation Noise are Present	94	46
BRIEF COMMUNICATIONS		
Radio-Electronic Devices		
L.I. Ponomarev, A.K. El'tsov, and Yu.V. Likhoded: The Parameters of an Avalanche Diode (AD) Generator with Synchronization by a High-Level Harmonic Signal	98	50
E.B. Lipkovich: Calculation of Intermodulation Component Levels in Schottky Barrier Diode Frequency Converters	99	51
L.G. Yanin: The Stability of a Selective AGC System	101	54
N.I. Smirnov and N.N. Zalichev: Optimization of the Storage Time in a Composite Signal Search Unit	103	55
Radio Engineering Circuits and Signals		
O.I. Dement'yev and V.A. Melezhik: Power Ratio of Fluctuating Signals and Its Use for the Threshold Estimation of Noise Hazard in Radar Tracking Systems	106	59
V.A. Skvortsov: Application of the Method of Sequential Analysis for Multiple-Value Estimation of the Distribution Parameters of a Bernoulli Sequence	108	62
M.B. Pinskiy and I.Kh. Rizkin: Construction of Histograms from Data of a Radio Engineering Experiment	110	64
A.A. L'vovich and Yu.A. Moskalenko: Determination of a Network of Discrete Frequencies on the Basis of Binary Pseudorandom Sequences	111	67
A.M. Shloma and G.B. Gol'feld: Sequential Detection of Signals on a Background of Non-Stationary Normal Noise	114	70
V.I. Kovalenko: The Transmission of a Video Signal at Two Carrier Frequencies	116	73
A.L. Beskin and L.N. Beskin: The Design of Highly Selective Elliptic Filters	118	75

	Page English	Page Russian
N.M. Antsibor and M.I. Zhodzishskiy: Measurement of Signal Frequency on a Background of Noise Utilizing Digital Phase-Locked Automatic Frequency Control Systems	121	78
Antenna and Waveguide Technology and Radio-Wave Propagation		
Yu.A. Yerukhimovich, A.Ya. Miroshnichenko, and E.S. Kulikov: Investigation of Antennas with Displaced Focal Axis and Hyperbolic Generatrix of the Small Mirror	123	80
G.A. Andreyev, V.V. Meriakri, S.N. Rubtsov and E.F. Ushatkin: Investigation of the Dielectric Properties of Ground Covers at Millimeter Wavelengths	126	84
Radio Optics		
A.E. Vornovitskiy: The Use of Modal Control to Synthesize a Complex Radio System	127	85
V.A. Maslov: Improvement of the Frequency Control Characteristic of a Quartz Oscillator	129	88

Number 6

PART 1
TELECOMMUNICATIONS
Volume 33

TELEGRAPHY AND DATA TRANSMISSION

V.N. Vrazhnov: Unproductive Load in Automated Telegraph Networks	1	4
V.P. Brazhnik and B.A. Semanov: A Circuit for Protecting Spacing in Session Communications Systems	6	8
P.D. Muradov: Evaluation of Reliability of Parallel Digital-Data Transmission in a Primary Baseband Channel	8	9

AUTOMATIC SWITCHING AND TELEPHONY

V.I. Kolbasova and M.M. Matveyev: Electronic Subscriber's Registers of Indirectly-Controlled Telephone Exchanges	11	18
Z.B. Revelova: Statistical Investigations of Subscriber's Load Parameters	16	22

CONTROL AND MEASUREMENTS

I.K. Bobrovskaya, B.G. Osipov, V.P. Zhigach, V.S. Kozkhin and E.L. Fedorova: Communications Channel Simulators	21	26
K.P. Romanov: Measuring the Parasitic Amplitude Modulation of Oscillators for the 0.15-30.0 MHz Band	25	30

COMMUNICATIONS SYSTEMS AND NETWORKS

E.A. Khmel'nitskiy: Fluctuations of the Angles of Incidence of Individual Rays in Radio-Relay and Broadcast Lines in the Short-Wave Band	28	33
N.V. Vinogradov and V.N. Vinogradov: Universal Criteria for the Composite Assessment of the Loading and the Efficeincy with which Radio Frequencies are Utilized	35	40
Yu.D. Umrikhin: Adaptive Control of a Communications Network Under Conditions of Indeterminacy	43	46
B.A. Glebov, T.N. Zharikova, and A.A. Lukin: A Converter for Secondary Electrical Supply Systems	49	56

PART 2
RADIO ENGINEERING
Volume 34

RADIO-ELECTRONIC SYSTEMS

A.V. Zen'kovich: The Relationship Between Nonlinear Harmonic and Combined Frequency Distortions of Modulated Oscillations in a Linear Circuit with Arbitrary Characteristics	55	6

	Page English	Page Russian
RADIO CIRCUITS AND SIGNALS		
Yu.B. Okunev, V.A. Pisarev, and V.K. Reshemkin: The Design and Noise-Immunity of Multiphase Autocorrelation Demodulators of Second-Order DPSK Signals	60	11
ANTENNA-WAVEGUIDE ENGINEERING AND THE PROPAGATION OF RADIO WAVES		
L.N. Loshakov and V.K. Dzugayev: Design of a Slow-Wave Structure of the Meander Type	64	17
A.R. Vol'pert: Electrical Scanning in the Elevation Plane Using the Effect of the Earth's Surface	69	23
BRIEF COMMUNICATIONS		
Radio Systems		
V.N. Vetlinskiy: Evaluation of the Maximum Range of a Pulsed Radar Station under Rainy Conditions	77	31
Yu.B. Zubarev: Criteria of Optimality of the Operating Zones of Spectrozonal Television Systems	78	33
A.P. Efimov and V.I. Sasarov: Evaluation of the Technical Compatibility of a Stereophonic System with Quadrature Modulation (for discussion)	82	37
A.O. Nikitin: Design of an Electronic Model of a Microwave Aircraft Landing System	83	39
Radio Electronic Devices		
N.D. Vorob'ev and B.P. Krekoten: Determination of the Forms of Combined-Frequency Interference when a Polyharmonic Signal is applied to a Nonlinear Device	86	42
O.A. Tyurikov and A.V. Polyanskiy: Determination of the Transient Characteristic of a Linear Electronic Circuit	87	43
A.I. Fedosova: Evaluation of the Mean-Square Error of a Nonlinear Tracking Second-Order Measuring Instrument	91	48
V.S. Skvortsov: Experimental Verification of the Statistical Characteristics of Sequential Analyzers	92	50
A.V. Kharitonov: Automatic Stabilization of Phase Excursion in a Single-Sideband Signal Amplifier	94	52
A.A. Dvornikov: Mutual Synchronization of Self-Oscillators Using a Non-linear Coupling Element	97	55
V.N. Mokhov: Compensation of Transients When Transmitting Digital Signals	99	57
I.V. Khmelevskiy: Estimation of the Noise Immunity of a Telephone Communications Channel with Delta Modulation	101	60
E.V. Borisov: The Noise Factor of a Transistor RC Amplifier with Quasi-Resonance	103	62
Yu.K. Levin: The Stabilization of Amplifying Sections	104	64
O.B. Kashchenko and Yu.F. Pavlenko: The Conversion of Amplitude Modulation into Phase (Frequency) modulation in FM Receivers	106	66
B.G. Mel'nikov: The Synthesis of a Radio-Engineering Servo Instrument which is Optimum by the Criterion of Maximum Probability that the Error Will Not Lie Outside a Given Region	108	68
V.I. Shelukhin: The Effect of Nonlinearities in the Receiving and Transmitting Circuits on the Accuracy of Measurement of the Position of Objects in Short-Range Radar	111	71
A.L. Tamm and A.A. Shipitsyn: Investigation of HF Feedback with Frequency Conversion of the Amplified Signal	113	74
Devices and Components		
I.N. Goncharov, V.P. Kutakhov, A.V. Petukhov, V.M. Sidorin, and I.M. Sukhar: The Noise Factor of Receivers with Photoelectric Multipliers	115	77
Radio Engineering Circuits and Signals		
V.A. Polyanskiy: The Problem of Estimating the Cross Correlation Function	117	79

	Page English	Page Russian
A.E. Znamenskiy: Optimizing the Bandwidth of a Bandpass Filter	118	80
A.E. Panov: The Natural Modes of a Fourpole and Their Use in Circuit Theory	119	82
A.P. Stepanov: Calculation of Radio Interference in Multichannel FM Communications Systems	122	85
FOR THE ENGINEER		
A.A. Titov: Simplified Design of a Wideband Amplifier	124	88
L.A. Göldobin: A Nomogram for Estimating the Energy Parameters of Amplifiers with Bridge-Type Power Summation	126	90

Number 7

PART 1
TELECOMMUNICATIONS
Volume 33

TELEVISION

V.A. Borovkov and M.G. Lokshin: Aspects of Electromagnetic Compatibility of Television Broadcasting Services	1	1
TELEVISION BROADCASTING IN MOUNTAINOUS TERRAIN		
A.A. Shur and B.F. Mel'nikov: Characteristics of Propagation of Vertically Polarized Waves in a TV Broadcast Network	6	5
S.V. Levinzon: Circuits for the Initial Setting up of the Units of a Telegraph Set	9	16
Yu.Ya. Shats, V.N. Tarasov, V.M. Protsenko, M.A. Shnir, V.M. Turbin, and S.N. Vashevich: The Base Principle of Channel Formation in Tone Telegraphy Equipment	14	19
A.A. Beskind, V.I. Shlyapoberskiy and V.V. Shtager: Construction and Use of Control Computers of the "Neva" Family	16	27
MULTICHANNEL CABLE COMMUNICATIONS		
S.S. Kogan and A.G. Likiardopulo: Control and Measurement of the Parameters of Analog-to-Digital Converters for Wideband Communication Signals	21	32
V.M. Belyavtsev: Effect of Higher Harmonics in a System with Parallel Amplification Channels	25	36
V.V. Vityazev, B.A. Alpatov, A.I. Stepashkin: Synthesis of Digital Narrow-band Filters for Frequency Separation of Channels	32	47
M.V. Pentyukhov: The Transform Functions of RC Networks with Poles of Higher Multiplicity	37	51

PART 2
RADIO ENGINEERING
Volume 34

DEVICES AND COMPONENTS

E.M. Mahukyan: A Stable Nanoampere Current Generator	41	3
V.I. Chaikovskiy: Effective Algorithms of the Maximum-Likelihood Processing of Location Signals	45	8
A.A. Lanne and B.S. Sarkisyan: Optimum Realization of Linear Electronic Circuits	50	14
B.S. Gol'dberg, Yu.P. Zhenevskii and G.V. Konovalov: Energy Characteristics of a Delta-Modulated Radio Signal	55	20

	Page English	Russian
BRIEF COMMUNICATIONS		
Radio Electronic Systems		
V.I. Kontorovich: Design of the Input Circuits of Push-Pull Transistor Power Amplifiers for Single-Sideband Signals	59	24
A.D. Frolov: Analysis of the Systematic Errors in Determining the Coefficients of the Polynomial Model of Electric Circuits	60	25
S.K. Savin: Distribution of the Values of a System Parameter in Multiple Tests	63	28
V.M. Malafeyev and V.M. Tuzov: A Spectrotron Based on a Delay Line	65	30
A.A. Kayatskas: A Mutual Synchronization System which is Invariant with Respect to Coupling Line Delays	67	32
A.I. Fedosova: Signal Locking Characteristics of a Tracking Measuring Instrument	69	35
Radio Circuits and Signals		
V.N. Ledovskoi and V.A. Shigin: Efficiency of a Rank-Type Nonparametric Detector in the Presence of Interference which is Nonstationary in the Reference-Sampling Interval	71	37
A.M. Ivanitskiy and P.N. Ganskiy: Self-Oscillatory Circuits which are Equivalent with Respect to the Characteristic Equation	73	41
M.D. Karpovskiy: An Immittance Stability Criterion	76	43
V.A. Smirnov, V.N. Kharisov and L.A. Ershov: Optimum Reception of Digital Signals on a Background of Random Pulse Interference	78	46
A.V. Bobrovnikov and V.P. Titov: Interference Immunity of the Transmission of Continuous Data with Symbol-by-Symbol Reception with Erasure	82	50
N.A. Bol'shakov: Mean Repetition Frequency of Noise Overshoots in a Digital Reversible Store	84	53
V.K. Kitayeva: Interference in Asynchronous Address Communication Systems Operating in Free Space	85	55
N.K. Ignat'yev: Derivation of a Formula for the Upper Limiting Frequency of a Television Signal	88	57
Antenna-Waveguide Engineering and the Propagation of Radio Waves		
V.G. Yampol'skiy: Matching of a Plane Waveguide with an Infinite Flange	90	59
V.S. Zvyagel'skiy, S.D. Kremenetskiy, V.F. Los', and M.T. Novosartov: A Recursive Design Method for Phased-Array Series Beam-Forming Networks	94	64
G.I. Veselov, N.I. Platonov, V.Ye. Acheyev: On the Electromagnetic Field Near the Edge of a Conducting Half-Plane	96	66
V.V. Rogozin, and A.N. Slavin: Methods of Improving the Selectivity of Ferrite Power Filter-Limiters	98	69
E.S. Golovin: On the Efficiency of Circularly Polarized Antennas Used in Mobile Radio Communication Systems	100	72
Radio Optics		
A.V. Pozharskiy: An Algorithm for Estimating the Angular Coordinates of a Source of Quantum Radiation	103	76
FOR THE ENGINEER		
A.A. Aref'yev and L.N. Stepanova: Threshold Circuits Using Controlled Equivalents of a p-n-p-n Structure	106	79
E.A. Volkov: Calculation of Nonlinear Distortion in Asymmetrical Balanced Frequency Converters	109	83
A.Z. Venger, N.D. Tereshchenko, V.I. Korzhenko and A.M. Yakimenko: An RF Pulse Multiplier	111	86

Number 8

	Page English	Page Russian
PART 1		
TELECOMMUNICATIONS		
Volume 33		
MULTICHANNEL WIRE COMMUNICATIONS		
L.T. Kim and E.Z. Rapoport: The K-1020S Transmission System	1	12
N.P. Nikiforov, S.G. Kamlet, A.M. Tsiklis and A.P. Shpigel: Measurement of the Overload Level on the Basis of a Digital PCM Signal	5	15
S.M. Vernik: A Compensation Method for Increasing the Protection between Trunk Line Circuits	9	19
RADIO BROADCASTING		
V.G. Buryak and T.G. Khvilivitsky: High-Power Shortwave Radio Broadcasting Transmitters	14	23
SATELLITE COMMUNICATIONS		
G.N. Kudeyarov, O.F. Fadeyev and V.M. Tsirlin: Optimizing Automatic Tracking Systems for Ground Stations	21	29
INDUSTRIAL COMMUNICATIONS		
V.K. Koshelev, Z.M. Slavin and R.K. Milvidskiy: The ODSP Supervisory Communications Equipment for Postal Enterprises	29	46
SIGNAL GENERATION, CONVERSION AND AMPLIFICATION		
O.I. Gubernatorov: The Equilibrium Time of the Oscillations in Digital Frequency Synthesizers	34	50
A.A. Lvovich and N.N. Legotin: Frequency Synthesis by Generating Quasi-Meanders	39	54
A.V. Kurilov: A Generator of Pseudorandom Pulse Trains at a Rate of 140 Megabits per Second	44	58
L.S. Artemyeva and A.A. Makarova: Calculation of Correction Networks for Wideband DC Amplifiers Incorporating Parallel Channels	47	61
PART 2		
RADIO ENGINEERING		
Volume 34		
A.L. Mikaelyan: Self-Focusing Waveguides for Optical Communication Lines	51	3
RADIO ENGINEERING SYSTEMS		
Yu.B. Zubarev: The Choice of Operating Zones in Spectrozonal Television Systems	61	16
RADIO ELECTRONIC DEVICES		
Yu.D. Sverkunov: A New Method of Constructing an Ideal Frequency Multiplier	65	20
RADIO ENGINEERING CIRCUITS AND SYSTEMS		
M.A. Bykhovskiy: An Analysis of the Noise Immunity of Digital Communication Systems in the Presence of Radio Interference	69	24
V.V. Kozlovskiy: Design of Multistage Resonators, Consisting of Homogeneous Transmission Line Sections, for a Specified Tuning Range	74	30
E.V. Zelyakh: An Analysis of Transmission through a Nonreciprocal Four-Terminal Network by the Method of Incident and Reflected Waves	78	34

	Page English	Page Russian
V.N. Belyayev: Stabilization of the Phase Response of a Highly Selective Tuned Circuit	82	38
ANTENNA-WAVEGUIDE TECHNIQUES AND PROPAGATION OF RADIO WAVES		
B.Yu. Kapilevich: Application of the Fourier-Expansion of the Penetration Factor of Media for the Analysis of Directed Waves in Nonuniformly Stratified Structures	87	43
BRIEF COMMUNICATIONS		
Radio Engineering Systems		
V.P. Postyushkov: Effectiveness of Energy Source Control in a PCM Communications System	91	48
Radio Electronic Devices		
R. Karlos and S.L. Chechurin: Analysis of the Conditions for the Excitation of Parametric Oscillations	93	51
L.P. Karba and L.N. Krutyakov: Evaluation of the Dielectric Breakdown Strength of Capacitor Structures in Hybrid-Film Amplifiers for the HF and Microwave Bands	96	53
M.V. Kapitonov, N.N. Prokopenko, A.I. Rogach and V. Yugai: Speed of Response of Low-Power Operational Amplifiers Operating Under Large-Signal Conditions	98	56
B.A. Pavlov: Optimum Parameters of a Synchronous Demodulator	99	58
V.P. Semenov: The Transient in the Detection of Radio Pulses Using a Square-Law Diode Detector	101	59
Radio Circuits and Signals		
V.V. Isakevich and A.N. Lapin: Processing of Phase-Shift Spectra in Problems of Combatting Intersymbol Interference	103	62
V.I. Kaganov: Parametric Synthesis of a Microwave Bandpass Filter Using Coupled Lines	105	65
Yu.A. Kuznetsov: The Optimum Order of Comparing Amplitudes when Selecting Signals in a Two-Channel Receiver	107	68
M.Ya. Voronin and T.A. Kondrat'eva: Synthesis of Wideband Microwave Resonators	110	71
G.A. Andreyev, Z.A. Martynova and G.I. Khokhlov: Effect of Reflections from the Underlying Surface on the Reception of Millimeter Waves	112	73
V.V. Naroushvili: A Method of Estimating the Stability of the Pulse Response of Linear Electronic Circuits	113	75
D.M. Vernik, G.A. Stolyarova and B.S. Sedykh: Analysis of the Errors in Measuring the Initial Phase of Data Using the Cross-Correlation Method	115	77
Antenna-Waveguide Techniques and Propagation of Radio Waves		
Yu.V. Alekseyev, B.E. Zhelezovskiy, A.M. Kogan and M.E. Shneyder: Computation of the Critical Wavelengths of Rectangular Waveguide with a Symmetrical П-Protrusion and a Groove by Using the Methods of the Theory of Planned Experiments	118	81
V.I. Katayev, B.S. Romanov, I.I. Tsifrinovich and B.G. Tsybayev: Results of an Experimental Investigation of Nonlinear Distortions in Antenna-Amplifiers at Meter Wavelength	120	86

Number 9

PART 1
TELECOMMUNICATIONS
Volume 33

ANTENNAS-FEEDER DEVICES

S.P. Belousov, R.V. Gurevich, G.A. Kliger: Antenna Arrays with a Wide Scanning Sector	1	1

	Page English	Page Russian
I.Sh. Basilaya and A.M. Pokras: An Axially Asymmetrical Antenna Equipped with a Beam Guide	6	6
V.D. Kchznetsov and V.I. Komissaron: Computation of the Maximum Field Strength in Short-Wave Feeder Lines	10	10
O.N. Maslov: Automatic Control of the Directivity of a Short-Wave Receiving Antenna	15	13
TELEVISION		
V.I. Barabash, A.C. Matsievskiy, S.V. Rachinskiy and A.L. Feinstein: A 50/10 kW Television Transmitter for the VHF Band	18	17
M.M. Kozlovskiy and A.A. Popov: Combination Type Distortion in TV Transmitters as a Consequence of Differential-Phase Nonlinearity	22	21
COMMUNICATION NETWORKS IN AUTOMATIC CONTROL SYSTEMS		
E.D. Li, L.B. Marimont, L.M. Nichaevskiy and Yu.A. Parfenov: The Transmission of Digital and Analog Information over Cable Links of Urban Telephone Exchanges	28	26
T.S. Antonova-Solovyeva, G.B. Levina, and V.K. Lezerson: Calculation of the Number of Channels in Alternate Route Banks of Trunks	32	29
Yu.A. Gogin, E.S. Zapasskaya and I.A. Letuchi: A Logical-Mathematical Method of Distributing Non-Switched Channels in Information Networks	36	33
AUTOMATIC SWITCHING AND TELEPHONY		
A.V. Zakurdaev and L.A. Tumanian: Mythistor Devices in Spatial Switching Systems	41	43
Y.V. Fidlin: Reorganized Switching Systems with Probability Restrictions	47	48
PART 2 RADIO ENGINEERING Volume 34		
RADIO SYSTEMS		
E.L. Afraimovich and V.A. Panchenko: Doppler Filtering in SW Direction Finding. Analog-Digital Processing of Modulated Signals	54	3
S.M. Zaidel: Engineering Methods for the Approximate Analysis of Radio Systems	58	6
RADIO ELECTRONIC SYSTEMS		
V.B. Kozyrev: Optimization of the Output Oscillatory Systems of Wideband Transmitters	64	14
G.Ya. Gensirovskaya, A.A. Kotkin, A.V. Krivosheikin, V.I. Moskvitin and M.A. Stolypin: Obtaining Conversion Linearity in the Development of the LSHIC for Precision Digital-Analog Converters	68	18
RADIO CIRCUITS AND SIGNALS		
S.M. Ryakovskiy: Approximate Relationships of the Potential Interference Immunity of Single Reception of Digital Data in the Presence of Slow Signal Fluctuations	73	23
V.P. Ukharskii and Yu.I. Gorbakovskiy: Investigation of the Interference Immunity of Generating Structures Using Analog Modeling Methods	77	27
ANTENNA AND WAVEGUIDE ENGINEERING AND THE PROPAGATION OF RADIO WAVES		
Yu.V. Pimenov and E.I. Prostakov: A Study of the Shadow Currents Induced in an Ideally Conducting Half-Plane Parallel to Its Edge by an Elementary Electrical Dipole	81	31

	Page English	Russian
Yu. B. Buzuev, Yu. A. Erukhimovich and A. A. Timofeyeva: Some Features of the Development of a Radiator for Type ADE Antennas	85	35

BRIEF COMMUNICATIONS

Radio Engineering Systems

F. F. Yurlov: The Use of Radio Systems in Compatible Forms as Regards Productivity and Cost	90	40

Radio Equipment

A. G. Semin, Y. B. Khapin and A. N. Sharapov: Aircraft Radiometers Based on Semiconductor Devices	92	42
S. I. Grechko: Investigation of a Refrigerated Mixer Based on a Schottky Diode at a Wavelength of 8 mm	94	45
V. M. Safonov: Investigation of the Stability of Phase-Locked Automatic Frequency Control Systems with Two Periodic Nonlinearities	96	47
G. I. Kravchenko, V. L. Gurevich and L. P. Mochalina: A Superregenerative Detector	98	50
S. M. Sarayev: A Superheterodyne Receiver with Wideband Preselector and Variable Intermediate Frequency	101	53
A. G. Dem'yanchenko and S. V. Yesin: Transients in Mutually Synchronized Generators	103	56
G. V. Merkishin: Comparison of Phase-Locked AFC Systems with Crossed Couplings and Synphase Summation for Two-Channel Reception	105	58
B. P. Burdzeiko and A. M. Paramonov: Tracking Loss in Pulse Sync Systems	108	62
Yu.-L. S. Sruogyus: A Quantitative Estimate of the Set of Parameters of Frequency Multipliers	110	64
M. S. Aralov and M. A. Speranskiy: Approximation of Chebyshev Polynomials $T_n(x)$ by Line Segments	111	66

Radio Circuits and Signals

B. D. Kagan and A. A. Stepanenko: Choice of Filter Bandwidth for Envelope Reception of FM Signals in a Channel with Doppler Effect	114	69
Yu. V. Arzumanyan, V. V. Ginzberg and A. S. Naumov: Reception of Signals with Redundancy when the Noise Parameters are Unknown	116	71
V. P. Ponomarenko: Tracking Loss in a Pseudo-Random Signal Sync System with Displacement Noise Action	118	74
V. B. Kats: Optimal Spectral Representation of Signals	120	77
P. V. Belov, G. N. Ivanov and V. I. Orlov: Logical Processing of Digital Signals with Parallel Reception	122	79
V. B. Tekshev: Determination of the Noise Parameters of a Microwave Bipolar Transistor	124	81
Yu. V. Ivanov: Influence of Phase Distortion on the Accuracy of Spectrum Analysis in Spin Analyzers	125	83
V. V. Rogozin and A. O. Fadeyev: Optimization of Three-Section Ferrite Filters	127	84
A. Yu. Goncharov: High-Efficiency Power Amplifier Design	129	88

Number 10

PART 1
TELECOMMUNICATIONS
Volume 33

TELEGRAPHY AND DATA TRANSMISSION

M. B. Askarova: Effect of Short-Term Reductions in Signal Level on Data Transmission Reliability Taking Misswitching into Account	1	6

	Page English	Page Russian
MULTICHANNEL WIRE COMMUNICATIONS		
N.E. Popova, A.A. Rozhdestvenskiy and A.I. Fukson: Monitoring of Breaks in Transmission in Coaxial-Cable Main Routes	5	9
E.V. Borisov and R.G. Tolparev: Reception of Phase-Shift Keyed Signals in Optical Cable Systems	8	17
MULTICHANNEL RADIOCOMMUNICATIONS		
M.A. Bykhovskiy: The Potential Interference Immunity of the Separation of Two FM Signals	11	19
A.N. Smantser: Estimate of the Value of the Echo Signals in the Feeder Channel of the Sections of a Radio-Relay Link	16	24
AUTOMATIC SWITCHING AND TELEPHONY		
N.N. Yakovenko: The Use of Bypass Routes in a City Telephone Network	23	29
L.P. Zharkova: A Unit for Providing an Additional Degree of Group Selection for Special City Telephone Exchange Services	28	38
PROPAGATION OF ELECTROMAGNETIC WAVES		
A.A. Shur and Yu.M. Kalinin: Some Features of the Propagation of Decimeter Radio Waves in the TV Broadcasting Network	31	41
B.S. Rybakov: Spectral Analysis of USW Signal Level in Long-Distance Tropospheric Propagation over the Sea	35	45
Ye.A. Larin: Approximate Determination of Statistical Distributions of Rainfall Intensity	39	49
COMPONENTS AND CIRCUITS		
A.I. Rynda, A.I. Tyazhev and N.A. Spiridonov: FSK Demodulators Using Digital Phase-Lock AFC Loops	43	52
S.I. Bakharev and N.S. Sokolova: Calculation of the Natural Parameters of a Two-Wire Three-Layer Line	47	56
PART 2		
RADIO ENGINEERING		
Volume 34		
ELECTRONIC DEVICES		
E.A. Bogatyrev and Yu.A. Grebenko: Analysis of Nonlinear Distortions in Active Filters Utilizing Volterra Series	51	4
V.A. Petrov: Investigation of the Statistical Properties of a Linear Model of a Pulsed Phase-Locked Automatic Frequency Control System	56	9
INSTRUMENTS AND COMPONENTS		
V.P. D'yakonov and T.A. Samoilova: A Mathematical Model of a Bipolar Transistor for the Usual and Avalanche Modes of Operation	61	13
ANTENNAS, WAVEGUIDES AND RADIOWAVE PROPAGATION		
D.N. Pokusin and M.I. Deigen: Design of Unidirectional Ferrite Strip Lines	66	19
A.S. Skryabin: Radio Wave Depolarization by Scattering at Plant Coverings	70	24
BRIEF COMMUNICATIONS		
Radio Systems		
V.V. Grigorin-Ryabov, V.I. Shelukhin and O.I. Shelukhin: Certain Features of the Design of Noisy Short-Range Radar Sets with Integrated Scanning	76	31
Electronic Devices		
Yu.B. Okunev: Generalization of the Algorithms of the Operation of Coherent Demodulators of Binary Signals with Phase-Shift Keying	78	33

	Page English	Russian
A.A. Aleksanyan, M.A. Sivers, and V.N. Plyusnin: Effect of Switching-Modulator Load Nonlinearity on Output Signal Distortions	80	36
N.I. Chistyakov: A Model of Amplitude-Phase Conversion	82	39
A.V. Ryzhkov: Oscillators Using Surface Acoustic Waves	83	40
Devices and Elements		
V.A. Pelishok and B.A. Mandziy: Determination of the Oscillation Frequency of a Self-Excited Hartley Oscillator	86	43
Radio Circuits and Signals		
G.P. Gusev: Measurement of the Field Intensity of Industrial Radio Interference in the Meter and Decimeter Wave Bands	88	46
Z.M. Krasnovskiy: Effectiveness of Error-Detecting Coding for CW Signals	90	48
B.I. Kuz'min: Estimate of the Noise Immunity of Frequency-Shift Keyed Radiotelegraphy with "Figure of Merit Detector"	92	51
S.B. Makarov: The Efficiency of Decision Feedback in the Demodulation of Spectrum-Limited Digital FSK Signals	94	53
D.I. Popov: Synthesis of Digital Nonrecursive Band Rejection Filters	97	56
A.I. Zaiko: The Differentiability of a Stationary Normal Random Markov Process	99	59
Antenna-Waveguide Engineering and Propagation of Radio Waves		
R.A. Kazaryan and A.V. Oganesyan: Statistics of Photoelectrons in the Reception of Radiation which has Passed Through a Turbulent Atmosphere with a Scattering Region	101	61
M.G. Gorleov and L.B. Tartakovskiy: Investigation of the Focusing Properties of Some Second-Order Surfaces when a Plane Wave is Incident at an Angle to the Focal Axis	104	65
V.M. Shlyakhin: Distortions of the Radar Characteristics of Complex Objects when Illuminated by a Spherical Wave	106	67
E.A. Dudkovskiy and S.S. Fomintsev: Calculation of the Characteristics of Ring Arrays Consisting of Wideband Radiators	108	69
L.A. Zhivotovskiy: Some Features of the Depolarizing Properties of Radar Targets	110	72
Engineering and Design Radio Apparatus		
B.I. Yulin, L.M. Zakupneva, Z.P. Mazova and G.G. Smolich: Layout of the Base Elements of Logic Circuits in Microcircuit Packages	112	75
FOR THE ENGINEER		
N.I. Belikov: Stability of the Parameters of Electromagnetic Delay Lines	114	77
Yu.N. Erofeyev: Frequency Band Selector of a Sequence of Rectangular Pulses with Respect to the Repetition Frequency	116	80
Letter to the Editor	119	83

Number 11

PART 1
TELECOMMUNICATIONS
Volume 33

A.I. Vetuygov: The Design of a Quaternary Digital Transmission System	1	13
D.A. Grinshtein: On the IKM-120 Secondary Digital Transmission System	7	18
N.N. Kamenskiy and V.M. Minkin: The Establishment of Digital Communication Channels in Radio Relay Links	15	25
G.Kh. Pankov, M.D. Grebelskiy, M.M. Simonov, V.M. Tsirlin, and M.I. Rozenbaum: The MDVU Equipment for Transmitting Digital Data Via Artificial Satellites	19	29

	Page English	Page Russian
S.A. Peregonov, S.S. Parasov and V.E. Chernyy: The "Radan" Digital Radio Relay Equipment for Rural Communications	22	31
G.P. Abugov, Yu.I. Lukyanov, A.M. Rakhman, B.S. Smolyak and V.M. Stroganov: The TsTA-1 Telephone Equipment for a Digital Communication Network	27	35
A.Ye. Botvinnik, S.A. Davydov, and P.B. Polner: Technical Diagnostics of the Line Channels of Single-Quaded Cables	34	41
L.M. Polyak: The Energy Spectra of Bipulse Signals. Pt. I	37	43
M.V. Nazarov and Ye.P. Ponomarev: Adaptive Difference PCM with Linear Prediction Based on a Ladder Filter	41	47
B.A. Medovar: Investigation and Choice of a Scrambler Converting Signal	46	52
V.A. Shuvalov: A Five-Level Balanced Code for Cable Digital Transmission Systems	53	58

PART 2
RADIO ENGINEERING
Volume 34

L.M. Andruskho and O.N. Litvinenko: Synthesis of Nonuniform Planar Dielectric Waveguides from Their Dispersion Properties Close to the Cutoff Frequencies	60	5

RADIO SYSTEMS

S.E. London and S.V. Tomashevich: Autotransformers with the Widest Frequency Band	73	20

RADIO CIRCUIT AND SIGNALS

Yu.B. Okunev, V.V. Perk'kov, and L.A. Yakovlev: The Use of Complex Signals to Design a Digital-Data Transmission System That is Invariant to Changes in the Signal Frequency and Phase	78	26
A.I. Breus and A.L. Kosova: Effect of Sensitivity and the Threshold Signal-to-Noise Ratio on Communication Reliability	82	30
A.A. Gorbachev and A.P. Koldanov: Some Nonparametric Approaches to the Discrimination of Hypotheses	86	35

ANTENNAS

B.M. Minkovich and E.D. Prilepskiy: Maximization of Antennas Gain Within an Elliptic Angular Zone	92	41

LASERS

R.A. Valitov, R.R. Valitov, F.V. Yefimov, N.G. Kokodiy, and G.P. Starodubtsev: Nonvacuum Ponderomotive Laser Power and Energy Meters	96	45

TECHNOLOGY AND CONSTRUCTION OF RADIOENGINEERING APPARATUS

G.N. Dul'nev, B.V. Pol'shchikov, and A.Yu. Potyagailo: An Algorithm for the Hierarchical Simulation of Heat Exchange Processes in Complex Radio-Electronic Equipment	100	49

BRIEF COMMUNICATIONS

Millimeter and Submillimeter Wave Techniques

A.I. Bochkarev, Ye.P. Kurushin, and G.S. Yatskar': Optimization of the Characteristics of Flange-Type Circulators at Millimeter Wavelengths	105	55

Radio Engineering Systems

V.A. Malyshev, A.F. Radchenko, and A.N. Levterov: Experimental Investigation of an Autodyne Gunn-Diode Mixer	106	56

	Page English	Page Russian
Yu. L. S. Sruogyus: Calculation of the Nonlinear Distortion of the Output Signal of a Frequency Multiplier	107	58
V. N. Kuleshov and M. P. Patsekin: Characteristics of Autonomous Oscillators, Constructed from a Two-Transistor Active Element with a Current Source in the Emitter Circuit	109	60
A. A. Aleksanyan, N. A. Baturin, and V. F. Dmitrikov: Transients and Steady-State Processes in Single-Cycle Class D Amplifiers	111	62
Chan Van Min: A Comparative Experimental Investigation of Some Demodulators of Phase-Shift Keyed Signals	114	65
Radio Engineering Circuits and Signals		
Yu. I. Rogozin: Derivation of the Acoustic Coupling Factor in Double Resonator Monolitic Quartz Filter Structures	115	67
V. N. Prokof'yev: An invariant Algorithm for Receiving Signals in the Presence of White Gaussian Noise and Spectrally Concentrated Interference	118	70
M. A. Bykhovskiy: A Simple Method of Calculating the Distortion of an FM Signal in the Presence of Radio Interference	120	73
L. I. Babak: Derivation of the Scattering Matrix of a Connection of Microwave Multiterminal Networks	124	78
Radio Optics		
R. G. Tolparev and E. V. Borisov: A Method of Improving the Noise Immunity of Atmospheric Optical Communication Lines	127	81
FOR THE ENGINEER		
Yu. A. Volkov, I. I. Il'yushchenko, V. A. Korolev and V. M. Paskhin: Parasitic Couplings and Reactances in a Broadband Hybrid Amplifier	128	83

Number 12

PART 1
TELECOMMUNICATIONS
Volume 33

DIGITAL COMMUNICATIONS SYSTEMS

V. I. Kamalyagin and A. Yu. Tsym: The Ratio Between Different Types of Noise in the Regeneration Section of a Balanced Cable	1	1
M. D. Grebel'skiy, G. Ih. Pan'kov and V. M. Tsirlin: Optimization of Satellite Link Lengths for High-Speed Digital Data	8	7
Yu. A. Alekseyev, L. A. Chernyshov and V. M. Shtein: Delta Modulation Rural Distributor Loop	10	9
V. N. Gordienko and V. N. Slaschev: Factors which Determine the Quality of Statistical Transmission Systems	13	13
G. P. Abugov, Yu. I. Lukyanov, A. M. Rakhman and A. E. Aleksandrov: The AVG-60 Equipment for Combining Subscribers' Bit Streams	17	16
E. V. Kordonskiy and D. A. Podberezin: The Effect of Interruptions of the Digital Signal on the Operation of the Clock Frequency Separator in a Regenerator	20	19
L. M. Polyak: The Energy Spectra of Bipulse Signals — Part II	24	22
V. I. Bushuyev: A Set of Measuring Instruments Designed for a Secondary Digital Communication System	29	26
E. V. Novikov, A. R. Rozanov and E. N. Rubinshtein: A Communication Line Signal Regenerator Using Standard Microcircuits at a Speed of 8448 Kilobits/sec	32	32
L. N. Gurvich: Digital Network Subscriber's Signal Transmission over Toll Cables	36	35

	Page English	Page Russian
V.N. Sarayev: Asynchronous Input of Multiplexer Signals into Digital Channels	39	38
E.A. Zarkevich, A.G. Korotich and A.S. Ustinov: Optical Fiber Subscriber's Line	43	42
A.D. Snegov: Digital Resonator Design	44	43
LOW-LEVEL RADIO COMMUNICATIONS		
V.G. Plotnikov: A Standard Structure for SW Link LF Channels	48	46
E.S. Golovin: Lowest-Level Radio Communications Equipment Design	50	48
PART 2 RADIO ENGINEERING Volume 34		
A.M. Pokras: Satellite Communications Ground Station Antennas	54	9
RADIO SYSTEMS		
Yu.D. Umrikhin: A Method of Evaluating the Quality of Random-Access Communications System Operation and Synthesis	62	19
RADIO EQUIPMENT		
A.A. Reznev and Yu.G. Tratas: A Phase Modulator Based on a Varactor Diode with Maximum Conversion Factor at Sideband Frequencies	68	25
RADIO CIRCUITS AND SIGNALS		
B.N. Mityashev and A.S. Terent'ev: The Rise Time of the Transfer Function and Phase Passband of a Low-Pass Filter	73	30
BRIEF COMMUNICATIONS		
Radio Systems		
Chan Van Minh: Solution of the Differential Equation of a First-Order Phase-Locked Automatic Frequency Control System	78	36
I.Kh. Rizkin: A Quasi-Static Method of Calculating Certain Random Conditions in Nonlinear Radio Systems by Computer	80	38
Radio Equipment		
N.S. Zhilin: Using a Phase-Locked AFC System to Stabilize an Intermediate Frequency	83	41
Yu.A. Zingerenko and M.A. Plotkin: An Estimate of the Dynamic Range of the Discriminator of a Regenerator Clock Frequency	85	44
I.A. Obolonin and V.I. Serykh: The Accuracy of Modeling Radio Channels	87	46
Yu.G. Nikitenko: Analyzing Methods of Frequency Modulation	89	48
Radio Circuits and Signals		
E.S. Poberezhskiy and M.N. Sokolovskiy: Influence of Intermodulation Noise on Reception Noise Immunity in the SW Band	91	51
D.I. Popov: Efficiency of Digital Nonrecursive Rejector Filters	93	54
B.A. Alpatov, V.V. Vityazev and A.I. Stepashkin: Synthesis of Digital Resonators for Narrow-Band Filtering Systems	95	57
Devices and Components		
Yu.R. Nosov: Optrons for Radio Equipment	97	59
Antenna-Waveguide Engineering and Propagation of Radio Waves		
Yu.P. Voropayev: Efficiency of a Microwave Matching Device Taking Dissipative Losses into Account	100	63

	Page English	Russian
FOR THE ENGINEER		
L.N. Stepanova: Compensation of the Temperature Drift of the Parameters of an S-Type Current-Voltage Characteristic in the Equivalent Circuits of a p-n-p-n Structure Using Active Elements	102	65
O.B. Lur'e: Limiting and Realizable Parameters of Differential Stages	104	67
Yu.S. Rusin and G.Ya. Rubinshtein: Problems in the Computer-Aided Design of Radio Apparatus	110	76